ASW/ASUW TACTICAL AIR CONTROLLER (ASTAC)
PRESCHOOL HANDBOOK

NAME:_____ **DATE:**_____

This page is to be used as a record of satisfactory completion of the **ASW/ASUW TACTICAL AIR CONTROLLER (ASTAC) PRESCHOOL HANDBOOK** for the **ASW/ASUW TACTICAL AIR CONTROLLER (K-221-2503)** training.

Successful completion of each section of this handbook may be accomplished by means of written examination, oral examination, or observation of performance.

This handbook is to be completed by the trainee **prior to class convening date**. The information provided herein is designed to ensure that the trainee will have the minimum knowledge required to support successful training in ASW/ASUW air control.

This handbook is testable prior to enrollment in the ASTAC course of instruction. Failure of the student to achieve **a minimum score of 80% on the course pretest may result in the student not being enrolled in the course.**

If the assistance required to complete this handbook is not available at a prospective student's current command, assistance is available at FLETRACEN, Norfolk, VA. Personnel desiring such assistance should contact the FTC ASTAC office at Commercial (757) 444-7913 ext. 360/398 or DSN 564-7913 ext 360/398.

It is requested that the leading Operation Specialists retain a copy of this handbook as a shipboard master copy for future reference.

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COMPLETION

Satisfactorily completing the enclosed performance items; it is hereby recommend that the above trainee be enrolled in the ASW/ASUW TACTICAL AIR CONTROLLER COURSE (K-221-2503).

RECOMMENDED: _____ DATE: _____
LCPO

RECOMMENDED: _____ DATE: _____
DIVISION OFFICER

RECOMMENDED: _____ DATE: _____
DEPARTMENT HEAD

RECOMMENDED: _____ DATE: _____
COMMANDING OFFICER

PREREQUISITES

(1) **Completion of ASTAC Preschool Handbook**

(2) **Successful completion of the ASTAC Pre-Test with minimum score of 80% prior to enrollment into course.**

(3) Personnel and rating eligibility: Be an Operations Specialist E-5 or above, who will be serving in an ASTAC billet upon return or arrival at his/her command.

(4) Personal physical requirements: All students must pass NAVY physical fitness standards and have normal color perception.

(5) Security clearance required: a SECRET security clearance is required prior to entry into ASW/ASUW Tactical Air Control Course of Instruction.

(6) Have a **minimum** of (6)six months previous ASW experience, including duties involving air tracking, identification, radio-telephone talking, NTDS operations, and supervision of these duties.

(7) **Have obligated service of not less than two years upon course completion.

**The total active obligated service (obliserv) requirement for those entering a course of instruction for a critical NEC that is listed in current NAVOP as SRB eligible will be 24 months from graduation from the NEC course of instruction.

SECTION COMPLETION SHEET

SECTION	SIGNATURE (LCPO/SENIOR AIR CONTROLLER)	DATE
I	_____	_____
II	_____	_____
III	_____	_____
IV	_____	_____
V	_____	_____
VI	_____	_____
VII	_____	_____

*** COMPLETION OF THIS PAGE IS MANDATORY ***
*** PRIOR TO APPROVAL OF PAGE 1 ***

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ENLISTED TRANSFER MANUAL (NAVPERS 15909D CH. NO. 3)
OPNAVINST 1211.2 (SERIES)

FORWARD

In this era of advanced radars, high speed computers, and advanced weapons systems, a well-trained aircrew must be able to do more than just survive.....they must effectively detect, track, engage, and fight their aircraft and weapons systems against some of the most sophisticated adversaries the U.S. Navy has ever encountered.

ASW/ASUW Tactical Air Controllers serve as an integral link in the effective employment and utilization of the U.S. Navy's air assets. They are the other half of the air combat team; exercising their skill and knowledge to support and direct the aircrews under their control.

Specifically, the ASTAC analyzes and transmits to the aircrew information required to perform it's mission in both training and combat environments, assists his command during the planning and execution of anti-submarine and anti-surface warfare operations, and controls fixed-wing and rotary-wing aircraft in support of his commands mission during such evolutions as shipboard ASW exercises, aircraft emergencies, and control of raid aircraft during ship and fleet exercises.

As an ASTAC trainee you will embark on one of the most challenging, exciting, and rewarding experiences available to an Operations Specialist in today's Navy. The pre-test administered the morning you arrive is not utilized to measure your knowledge as an ASTAC, but to measure your knowledge as a journeyman level Operations Specialist. Spending time to study your pre-school handbook and diligently working on required line items will prepare you for the pre-test. The pre-test requires a passing score of 80%. Prospective students who fail the pre-test may be disenrolled from the course.

ASW/ASUW TACTICAL AIR CONTROLLER QUALIFICATION

In accordance with the current OPNAV Instruction 1211.2 (series), the following criteria must be met before qualification and designation as an ASW/ASUW TACTICAL AIR CONTROLLER:

(1) Satisfactory completion of the ASTAC course of instruction at FTC NORFORK ASW DEPT, or FLEASWTRACEN, San Diego, CA. or

(2) Fulfill the requirements of a comprehensive ASTAC training program utilizing synthetic trainers.

(3) Demonstrate proficiency in the use of radar, communications equipment, and peripheral equipment utilized in the exercise of ASW/ASUW TACTICAL AIR CONTROL functions.

(4) Demonstrate the ability to safely control live aircraft.

(5) Demonstrate an understanding of, and familiarity with, standard ASW/ASUW AIR CONTROL procedures and techniques, aircraft emergency procedures, and shipboard procedures regarding aircraft emergencies.

SECTION I

ASW/ASUW TACTICAL AIR CONTROL (ASTAC)

The ASTAC in today's Navy is required to be able to control ASW aircraft in a multitude of missions, ranging from SAR operations to OTH targeting. There are various types of ASW aircraft you may be called upon to control, from the land based P-3C Orions and carrier based S-3B Vikings, to helicopters like the SH-3H Sea King, SH-2 (LAMPS MK I) Sea Sprites and the SH-60B (LAMPS MK III) Sea Hawks. ASTACs must be proficient in the techniques to provide assigned aircraft with the information necessary to complete its assigned mission and in providing coordination between surface and air units to allow both assets to be utilized without becoming a threat to each other.

TYPES OF CONTROL

The following terms and definitions are used to describe mission and safety related control used when controlling aircraft.

Close Control - A form of aircraft mission control in which the aircraft is continuously controlled for altitude, speed, and heading to a position from which the mission can be accomplished.

Loose Control - A form of aircraft mission control in which the aircraft commander selects his own altitude, speed, heading and the appropriate tactics required to accomplish the assigned task. The controlling unit will advise the aircraft of the current tactical picture and will provide further advice when available.

Broadcast - In the absence of full capability, or if the tactical situation precludes close or loose control, aircraft may be operated under broadcast control; tactical or target information is passed to enable the aircraft to accomplish the assigned task. The controlling unit, when possible, provides adequate warnings of hazards, but the aircraft commander is responsible for aircraft navigation and collision avoidance. Two-way communications are not a prerequisite for this type of control.

Positive - The controlling unit is responsible for taking actions for collision avoidance, such as ordering necessary alterations to altitude, speed and heading to maintain separation criteria.

Advisory - The controlling unit will provide adequate warnings of hazards affecting aircraft safety. The aircraft commander is responsible for the aircraft's navigation and collision avoidance.

The following combination of terms will normally be used, however, in exceptional circumstances, the terms may be used in isolation:

CLOSE-POSITIVE CONTROL

CLOSE-ADVISORY CONTROL

LOOSE-POSITIVE CONTROL

LOOSE-ADVISORY CONTROL

BROADCAST

SUPERVISOR'S SIGNATURE_____DATE_____

SECTION II

ASW/ASUW TACTICAL AIR CONTROL RESPONSIBILITIES

The controlling unit and the ASTAC are responsible for all functions connected with ASW/ASUW Air Control, including assisting in the detection of surface and subsurface threats and providing the information necessary for the aircrew to engage the enemy safely and to the best of their ability. The ASTAC is also responsible for the safe control of aircraft during peacetime and training evolutions. The ASTAC may be called on to control many different types of fixed wing and rotary wing aircraft, participating in missions such as search and rescue, simulation of raid aircraft, anti-surface warfare, and anti-submarine warfare.

The shipboard ASW and ASUW teams assist the ASTAC in his duties by directing him in his orders to the aircraft and providing information to him that has been gathered from sources other than the aircraft under his control, such as intelligence reports and intercepts of electronic emissions.

The shipboard ASW team consists of:

(1) SUWC/SWC/TAO - Responsible for directing the ship's weapons systems to defeat the threat. Aircraft assigned to a ship are considered both a force and a ship weapon.

(2) ASWE - Responsible for ASW and LAMPS MK III weapons systems to defeat the ASW threat. Reports to the TAO.

(3) TRACK SUPERVISOR/RADAR CONTROL OFFICER - Controls and coordinates radar, electronic surveillance, and identification data and its dissemination to plots and displays.

(4) DETECTOR/TRACKER/REMRO - Detects, tracks and reports to appropriate plotters and supervisory personnel all radar contacts within his assigned surveillance area. REMRO controls helicopters radar in helo control.

(5) SONAR OPERATOR/ASO - Detects and reports sonar contacts. Tunes and processes sonobuoys, and relays information to the ASTAC.

(6) ASTAC - Directs assigned aircraft to investigate contacts as assigned by the ASWC, ASUWC, SWC, SUWC or TAO/ASWE in defense of the force. Relays status of aircraft, search progress, and aircraft contacts to shipboard ASW/ASUW personnel.

(7) PLOTTERS - Plot data from various sources to update course, speed, position and doppler.

(8) EW SUP/ESMO - Monitors the Electronic Environment through AN/SLQ-32 and AN/ALQ-142, assisting with detection, classification, and localization of hostile platforms, radars, and weapons.

The ASTAC is responsible for the following areas:

(1) Aircraft navigation.

(2) Aircraft safety.

(a) Most important of all responsibilities.

(3) Collision avoidance.

(4) Accomplishment of mission.

In order to meet these responsibilities, the ASTAC must consider the following variables while controlling aircraft:

(1) Variations in weather and visibility.

(2) Type(s) of aircraft available.

(3) Weapons to be utilized.

(4) Equipment capabilities/limitations of assigned aircraft.

(5) Threat expected.

(6) Rules of engagement in effect (ROE).

Additionally, the ASTAC must be thoroughly versed in:

(1) Established control procedures.

(2) Performance of aircraft.

(3) Fuel consumption data.

(4) Requirements to effect a landing in existing weather.

(5) Computation of remaining fuel to distance.

(6) Emergency procedures.

SECTION II (CONT)

A mutual exchange of data between the aircrew, ASTAC and surface ASW/ASUW team members regarding availability of aircraft, aircraft position, aircraft fuel and weapons status, and results of searches is mandatory if an effective ASW/ASUW organization is to be developed and maintained.

SUPERVISOR'S SIGNATURE_____DATE_____

SECTION III

EQUIPMENT OPERATIONS

As an ASTAC student you will utilize the following radar repeater/console and related equipment:

(1) NTDS CONSOLE - OJ-194 (FFG-7 software programs)

1. NTDS CONSOLES

TASK

a. Use console panel controls to adjust focus, sweep, video, symbols, plotter, panel dimmers, leaders and offsets (both adjustable and automatic).

b. Rotate the outer scope face to compensate for local magnetic variation and be able to read magnetic bearings from the outer scope face.

c. Use the **range selector** and understand how varying the range affects the radar picture.

d. Use **number entry** dials with all functions (i.e., SIF, Function Code, Height, Track callup, and clear).

e. Use the **RADAR SELECT, VIDEO SELECT, RADIO INTERCOMMUNICATION SYSTEM,** and **SIF/IFF CHALLENGE GATE SELECT SWITCHES.**

f. TIME TO GO INDICATOR: **(ADJUSTABLE VELOCITY LEADERS)**

SUPERVISOR'S SIGNATURE_____ DATE_____

SECTION IV

IDENTIFICATION FRIEND OR FOE (IFF)

As an ASTAC student you must be familiar with IFF systems used when controlling live aircraft. The following checklist will help you become familiar with the AIMS MK-XII IFF system and the AN/UPA 59A Decoder group.

1. TASK

a. Know, by name the three units of the AN/UPA-59A Decoder Group and understand their functional relationship with respect to each other.

b. Locate the **INTRG/OFF/LOCAL** switch and state function of each switch position.

c. Locate the **12P/6P** switch and state the function of each switch position.

d. Locate the **RANGE INHIBIT/OFF** switch and state the function of each switch position.

e. Locate the **RDR/OFF/MIX** switch and state the function of each switch position.

f. Locate the **DECODE/OFF/CODE** switch and state the function of each switch position.

g. Locate the **STRETCH/OFF** switch and state the function of each switch position.

h. Locate the **BKT/OFF** switch and state the function of each switch position.

i. Locate the **I/P/OFF/X** switch and state the function of each switch position.

j. Locate the **READ GATE** switch and understand its relationship to the TARGET SECTOR GATE, and the INTRA-TARGET DATA INDICATOR.

k. Locate the **SECTOR RANGE** control and state its function.

TASK

l. Locate the **MODE 1, 2, and 3A** pushbuttons and state the function of these pushbuttons.

m. Locate the **SELECTED** switch and state the function of the switch.

n. Locate the **LO/UP SELECTED ALTITUDE LAYER (SAL), SIF/OFF/MODE C TEST CONTROL and the -99/OFF/-1K** switches and state the function of each switch.

o. Locate the **MODE SELECT** switches and state the function of each switch.

p. Know the location of the **AN/UPA-59A MODE 7600/ 7700/4X** emergency indicators, their associated colored light displays, and the function and operation of the **MUTE** pushbutton.

q. Be able to identify **7600/7700/4X MILITARY emergency PPI displays** (coded and decoded) and know the specific characteristics of each type of display.

r. Locate the **M4 OVR** (Mode 4 OVERRIDE) switch and state the use and function of the switch.

SUPERVISOR'S SIGNATURE_____DATE_____

SECTION V

COMMUNICATIONS

One of the primary functions of an ASTAC is to relay information to and from the aircrew. Information the aircrew must have includes: force weapons policy; force tactical disposition; threat intelligence; and position information on assigned targets. ASTAC radiotelephone (R/T) procedures have a great similarity to other R/T procedures, but the speed of events and transmissions leave little margin for error or misunderstood communications in the ASTAC world.

BASIC ASTAC COMMUNICATIONS PROCEDURES

Good R/T habits are a must. The ASTAC must:

(1) Listen before transmitting.

(2) Know what you are going to say BEFORE transmitting.

(3) Don't stop transmissions before completed.

(4) Use proper vocabulary and prowords.

(5) Keep voice natural but firm.

(6) Keep transmissions brief and clear.

(7) Never combine descriptive and directive statements in the same message.

RADIO TRANSMISSIONS

The following pages contain examples of the basic transmissions used during ASW/ASUW air control. These standard transmissions are designed to meet the requirement for quick and concise communications during ASW/ASUW air control as outlined in NWP 55-2-2.

CHECK-IN PROCEDURES

During the initial check-in the pilot and controller must pass vital information prior to the acceptance of control of the aircraft. The acronym **P I P L O W** is used by the ASTAC as a check list to ensure the minimum amount of information is obtained during the check-in. The following transmissions will take you step-by-step through the check-in of a non-organic air asset, utilizing and defining the PIPLOW procedures. As a student you will be using these procedures every day in ASTAC school, and you will be required to know them verbatim.

There are six (6) steps in **PIPLOW** that MUST be completed during aircraft check-in. They are:

(1) **P** Pilot's report.

PILOT: "Tango Two Oscar, this is Indian Gal 726 up for your control, over."

ASTAC: "Indian Gal 726 this is Tango Two Oscar, say your pilot's report, over."

PILOT: "Indian Gal 726, one (SH-3/S-3/SH-2), 250, Tango Two Oscar, 6 miles, heading 253, indicating 85 knots, level Cherubs 3, state (fuel) 3+30, four souls on board, ASW Kilo "A", over."

* (2) **I** Identification/Altimeter – Positive identification of the aircraft is required.

*These two steps can be accomplished with one transmission.

ASTAC: "Indian Gal 726, this is Tango Two Oscar, radar contact 253, 6 and 1/2 miles, Altimeter 30.06 and steady, **read back Altimeter, over.**

Pilot: "Tango Two Oscar this is Indian Gal 726, Altimeter 30.06 and steady, over."

****PILOT MUST READ BACK ALTIMETER**

* (3) **P** Pigeons/Execute Type of control

*These two steps can be accomplished with one transmission.

ASTAC: Indian Gal this is Tango Two, Pigeons 073, 6 and a half NM, execute close positive control over.

PILOT: Indian Gal, roger close positive control.

(4) **L** Lost Communications procedures.

ASTAC: "Indian Gal 726, this is Tango Two Oscar, Lost Communication procedures follow; if no communication with Tango Two Oscar for any 5 minute period switch, secondary control frequency, if no joy, proceed 245 Tango Two Oscar, 4 miles, angels one, squawk mode three 7700 for one minute then mode three 7600 if no further emergencies exist, acknowledge lost communications - over."

PILOT: "Indian Gal 726 Wilco lost comms."

** Upon acceptance of established lost communication procedures the ASTAC can execute control over the aircraft.

ASTAC: "Indian Gal 726, this is Tango Two Oscar, execute close-positive control over."

PILOT: "Roger, understand close positive."

(5) **O** Orders to the Aircraft

ASTAC: "Indian Gal 726, this is Tango Two Oscar, your orders, conduct random automatic dipping, your sector 2128 tack 0830 over."

PILOT: "Roger orders."

(6) **W** Weather

ASTAC: "Indian Gal 726, weather my area, clouds 1700 broken, 14000 overcast, visibility 9, temp. 64, dew point 42, winds are from 180 at 12 over."

As discussed earlier the preceding PIPLOW is used with NON-ORGANIC assets. If your unit has a Detachment embarked, the above information can be given during a pre-mission brief and an abbreviated PIPLOW conducted when the aircraft reports "OPS Normal."

BASIC TRANSMISSIONS

The following example transmissions are used during the control of an ASW aircraft during a mission by an ASTAC. As a student you will be using these transmissions during Control Scenarios (CS's) and during live control.

(1) STRANGER REPORTS

As an ASTAC you are responsible for the safety of your aircraft, you **MUST** report any and all strangers within 10 miles of your aircraft. The letters **D D H A** are used to ensure the proper information is passed to the aircraft.

D Direction - The direction of the stranger **from your aircraft to the stranger**. Direction can be given in one of three different ways. When your aircraft is on a **steady** course, clock codes are used:

ASTAC: "726, Stranger 3 o'clock." or if your aircraft is in a turn, geographic direction or bearings may be used:

ASTAC: "726, Stranger Northeast."
"726, Stranger 040."

D Distance - Given in miles:

ASTAC: "726, Stranger 3 o'clock, **7 miles**."

H Heading - The direction the stranger is heading, it can be course and speed if known or general direction and speed of movement:

ASTAC: "726, Stranger 3 o'clock, 7 miles **heading 225 speed 125**."
"726, Stranger 3 o'clock, 7 miles **heading southeast speed medium**."

A Altitude - If known given in feet, if not known state - unknown:

* ASTAC: "726, Stranger 3 o'clock, 7 miles, heading southeast speed medium, **altitude 1500 feet**."

* Example of a complete stranger report to be given to an aircraft.

(2) SONOBUOY DROPS

(a) Steer aircraft "LEFT/RIGHT" to "SPIT" position.
(b) "PREP (NUMBER "if known" AND TYPE OF BUOY) TO SPIT AT MY COMMAND."
(c) At 1000 yards, "STANDBY TO SPIT".
(d) When on top of position, "SPIT, NOW-NOW-NOW".

(3) OPERATING MAD GEAR

Before conducting any type of MADVEC, you must first verify that the MAD gear is in the operating mode. Determine from the pilot if his "MAD gear is excited", for fixed boomed aircraft, or "MAD gear streamed and excited" for towed MAD equipment.

(a) Steer aircraft "LEFT/RIGHT" to MADVEC line.
(b) "EXECUTE RADAR MADVEC".
(C) "LEFT/RIGHT" corrective headings.
NOTE: 5 TO 30 degree maximum correction.
(d) "STANDBY", Given 500 yards from estimated contact position.
(e) "ON TOP, NOW, NOW, NOW."
(f) "MADMAN" or "NO-JOY"
(g) "CONTINUE PRESENT HEADING" or vector to setup next MADVEC.

(4) DROPPING WEAPONS

(a) Steer aircraft "LEFT/RIGHT" to attack heading.
(b) "EXECUTE RADAR VECTAC, BLOODHOUND, RELEASE ON MY COMMAND OR NEXT MAD CONTACT".
(c) "LEFT/RIGHT", corrective headings of 5 to 30 degrees maximum.
(d) "STANDBY WEAPON", given 1000 yards prior to release point.
(e) "WEAPON READY", pilot response indicating bay doors/switches set for weapons release.
(f) "DROP NOW, NOW, NOW", order to release weapon.
(g) "BLOODHOUND AWAY", pilot response to release.
(h) "CONTINUE PRESENT HEADING" or vector for next attack.

SUMMARY

As you can see, air control transmissions are short and contain a number of unique terms and prowords. The following prowords are a partial list of the terms you will use as an air controller. Frequent use of NWP 55-2-2 and experience working with aircrews will expand this list greatly.

BASIC ASTAC PROWORDS

PLAYMATE - friendly aircraft with which I'm working.

(FILL IN THE REMAINDER)

PARROT -

BINGO -

HOMEPLATE -

STEER -

IN THE DARK -

ANGELS -

CHERUBS -

FATHER -

FREDDIE -

BUSTER -

TALLY HO -

STRANGER -

VISUAL -

BOBBY BEARING -

HAWK -

FEATHER -

SALVO -

The complete list of ASW PROWORDS can be found in ACP-165 and NWP 55-2-2 ASW TACAID.

SUPERVISOR'S SIGNATURE_____ DATE_____

SECTION VI

EMERGENCY PROCEDURES

AIR RESCUE AND EMERGENCY PROCEDURES

The purpose of this chapter is to provide the student with a basic understanding of airborne emergencies and the action that the ASTAC may take to limit the possible loss of life and equipment involved.

The principle objectives of this area are:

(1) List the two radarscope displays that may be seen in the event of an airborne emergency.

(2) List the three audio signals that may occur as the result of an airborne emergency.

(3) Given a list of controller actions, select those actions that are usually required in the event of an airborne emergency.

RADAR SCOPE DISPLAY

There are two types of radarscope displays that may appear as a result of an airborne emergency: emergency IFF/SIF squawks and distress flight patterns. They may appear alone or in combination.

EMERGENCY IFF/SIF SQUAWKS

A pilot experiencing an emergency may elect to squawk an emergency code (7600, 7700, or 4X) depending on the aircraft and emergency involved. The associated video display will be displayed on the radarscope.

DISTRESS PATTERNS

A pilot experiencing a failure of his radio receiver and/or transmitter may elect to fly one of the following triangular distress patterns: transmitter and receiver inoperative - fly a left-hand pattern; if receiver operative, but transmitter inoperative, fly a right-handed pattern. A jet will fly one minute legs and rotary propeller aircraft will fly two minute legs.

LEFT RIGHT

Here is a memory aid that may help:

LEFT HAND PATTERN - LOST EVERYTHING

RIGHT HAND PATTERN - RECEIVE ONLY

AUDIO SIGNALS

In addition to, or instead of, a visual presentation, the ASTAC may be made aware of an emergency by means of an audio signal. Like visual presentations, the audio signals may appear individually or in combination. These signals include:

(1) Voice radio transmissions.
(2) AN/UPA-59 audio alarm.
(3) Beepers.

VOICE RADIO TRANSMISSIONS

The voice transmission may come as a transmission from the aircraft experiencing the emergency or it may be received as a relay from another aircraft. The proword **MAYDAY** may be transmitted by the aircrew on the frequency they are currently using or on Military Air Distress (MAD) frequency 243.0 megahertz (also known as "Guard"). In an emergency where an aircraft may not be able to contact its controller, or is not working with a controller, the aircraft may contact another aircraft to relay the emergency data to a controller.

AN/UPA-59 AUDIO ALARM

When the AN/UPA-59 receives a code 7600, 7700, or 4X emergency response, an audio alarm is sounded on the UPA/59 alarm monitor. In areas of heavy air traffic, this monitor may sometimes be triggered by false alarms and/or maintenance testing.

BEEPER

All pilots carry small radios in their personal survival vest which are capable of transmitting a tone and/or voice on MAD. The pilot's personal radio is also capable of limited short-range two-way voice communications. When an aircrewman ejects, the radio in his seat pan is automatically triggered. The resulting tone can be used to key other units to an emergency in progress and to pinpoint the crewman's position. The radio in the survival vest has a short range and is normally used during SAR operations. The tone of the beeper is almost impossible to describe, but once heard it is unforgettable.

CONDITIONS OF EMERGENCY

When an aircraft is in distress, the pilot should indicate to the ASTAC which condition of emergency exists. The ASTAC must remember, throughout the emergency, that the pilot is the boss of his aircraft and the final decision in all cases rests with him.

The following are the conditions of emergency:

(1) IMMEDIATE - when the pilot decides that he must land immediately upon arrival at the nearest landing field or be forced into a ditching, forced landing.

Possible causes: engine flameout, structural damage, major hydraulic failure, fire.

(2) DELAYED - the pilot deems that an early landing is necessary in the interest of safety, but believes he can orbit the landing site for a short time while they set up to receive him.

Possible causes: low fuel state, minor hydraulic problems, generator failure.

(3) DEFERRED - the pilot decides that an emergency landing will be required, but that he can remain airborne without further damage.

Possible causes: landing gear inoperative.

(4) LAME DUCK - an aircraft that can remain airborne and conduct normal flight, but that can't complete its mission because of failures to ordnance, radar, or other minor equipment failure.

CONTROLLER'S RESPONSE TO AN EMERGENCY

Whenever an emergency situation exists, the controller must respond quickly and correctly. The acronym **L I N T** is utilized to help the controller respond in an emergency.

LOCATE - the aircraft with the emergency.

INTENTIONS - of the aircrew must be determined.

NEEDS - of the aircrew must be determined and coordinated.

TELL - all concerned parties of the existing emergency.

The controller should write down on his plotting head all information concerning the emergency including a four digit time. The ASTAC must continue to track an aircraft that has declared an emergency as long as it remains airborne. He must also inform whoever is in charge of airspace management for the area in which the aircraft is working (the carrier if working with one at sea, a FACSFAC, or even an FAA control station if appropriate), the aircraft's home airfield or carrier, and his squadron if possible.

The ASTAC should also make every attempt to have another aircraft placed under his control or otherwise headed for join-up with the aircraft in distress as soon as possible. The ASTAC must keep a record, tape or written, of all transmissions and actions taken by him/herself, the aircrew and other units involved in the emergency.

If the aircrew must eject or ditch, the ASTAC must mark the water entry point on his scope. If NTDS equipped, the proper symbology should also be entered into the NTDS system. The bearing and range from ownship of the estimated entry point should also be transferred to the DRT and navigational charts to assist in search and recovery operations.

SUPERVISOR'S SIGNATURE_____DATE_____

AIRCRAFT EMERGENCIES

Once you have become an ASTAC, an area of important concern is A/C emergencies. This guide has been included in order to familiarize you with the types of emergencies that can be experienced and the actions required in response to each type.

NATURE OF EMERGENCY	ACTION TO BE TAKE BY HELICOPTER	ACTION REQUIRED BY SHIP
DUAL ENGINE FAILURE	PILOT WILL AUTOROTATE TO THE WATER	1. PLOT AIRCRAFT POSITION. 2. TURN TOWARD CRASH SITE IN-CREASE TO BEST SPEED IF NECESSARY. 3. PASS THE WORD STATING SITUA-TION AND IN-TENTIONS. 4. MAKE READY AND MAN LIFEBOAT. 5. BRIEF AND STA-TION ADDITION-AL LOOKOUTS. 6. COLLECT ALL DEBRIS AT SCENE OF CRASH
LOSS OF TAIL ROTOR THRUST ENGINE FAILURE.	TO PREVENT HELICOPTER FROM SPINNING OUT OF CONTROL, PILOT WILL AUTOROTATE TO THE WATER.	SAME AS FOR DUAL
LOSS OF TAIL ROTOR CONTROL ENGINE FAILURE.	IF NO BINGO FIELD OR LARGE DECK IS AVAILABLE, HELICOPTER WILL PROCEED TO VICINITY OF SHIP AND PREPARE FOR DITCHING.	SAME AS FOR DUAL
FIRE IN FLIGHT RETURN OUT	IF FIRE IS EXTINGUISHED, ENGINE FAILURE. IF DITCHING IS	SAME AS FOR DUAL HELICOPTER WILL TO SHIP. IF FIRE

		OF CONTROL, PILOT
WILL	NOT REQUIRED, SET	DITCH HELICOPTER
EMERGENCY FLIGHT		
	QUARTERS AND TURN	
	TO BRC WHEN WITH-	
	IN 2 NAUTICAL	
	MILES FROM	HELICOPTER

NATURE OF EMERGENCY	ACTION TO BE TAKEN BY HELICOPTER	BY SHIP
ACTION REQUIRED		
ENGINE MALFUNCTIONS	THE HELICOPTER CAN	IF ENGINE MUST BE
	SECURED PROCEED	EXPERIENCE VARIOUS
	AS IN SINGLE	ELECTRIC THROTTLE,
	ENGINE FAILURE	FUEL CONTROL
ENGINE	OTHERWISE A	PROBLEMS, OR
LIGHT.	NORMAL HELICOPTER	CHIP CAUTION
	RECOVERY WILL BE	THE BAD ENGINE MAY
	CONDUCTED.	HAVE TO BE SECURED
	PROCEDURES FOLLOWED.	AND SINGLE ENGINE
LOW COMBINING OR MAIN GEARBOX OIL PRESSURE	PILOT WILL FLY AT 50 KNOTS AND 50' TOWARD SHIP	1. HEAD TOWARD HELICOPTER AT
	FLANK SPEED.	AT FIRST SIGN
FAILURE.	2. SET EMERGENCY	OF GEARBOX
	FLT. QUARTERS.	
	3. WHEN WITHIN 2	
	MILES,TURN TO	
	BRC.	
	4. IF DITCHING IS	

		REQUIRED, SAME AS FOR DUAL ENGINE FAILURE
LOW ENGINE OR SPEED DECREASES OIL PRESSURE	PILOT WILL SECURE ENGINE AND RETURN TO SHIP	SAME AS FOR SINGLE ENGINE FAILURE.
GEARBOX CHIPS SAME AS FOR LOSS GEARBOX OIL	CAUTION LIGHT	POSSIBLE METAL PARTICLES IN ONE OF THE GEARBOXES. OF PILOT WILL PROCEED TO SHIP EITHER AT 50 KNOTS (MAIN OR COMBINING GEARBOX) OR 70 KNOTS (INTERMEDIATE OR TAIL ROTOR GEARBOX).
FUEL BYPASS SAME AS FOR LOSS CAUTION LIGHT GEARBOX OIL	PILOT WILL RETURN HELICOPTER TO SHIP DUE OF PRESSURE.	TO POSSIBLE FUEL CONTAMINATIONS AND POSSIBLE DUAL ENGINE FAILURE.
ABNORMAL VIBRATION	PILOT WILL RETURN TO SHIP OF GEARBOX OIL	SAME AS FOR LOSS PRESSURE.

NATURE OF EMERGENCY	ACTION TO BE TAKEN BY HELICOPTER	ACTION REQUIRED BY SHIP
ERRATIC CONTROL INPUTS	USUALLY CAUSED BY PROBLEM IN ASE OR HYDRAULIC SYSTEM. PILOT WILL PROBABLY MAKE INTENTIONAL	1. HEAD TOWARD HELICOPTER AT BEST SPEED. 2. SET EMERGENCY

ASE		FLT. QUARTERS.
BOOST-	3. WHEN WITHIN 2	OR HYDRAULIC
THIS	MILES TURN TO	OFF LANDING. IF
PROBLEM,	BRC AND SPEED	DOES NOT CLEAR IT
IS MECHANICAL, AND	TO PROVIDE	PILOT MAY HAVE TO
DITCH	MOST STEADY	
HELICOPTER.		DECK POSSIBLE
		WITHIN EMER-
		GENCY WIND
		ENVELOPE. IF
		DITCHING IS
		REQUIRED, PRO-
		CEED SAME AS
		FOR
DUAL		
		ENGINE FAILURE
LOSS OF HYDRAULIC BOOST	PILOT WILL ABORT MISSION AND RETURN	SAME AS FOR
ERRATIC CONTROL	TO SHIP	INPUTS.
LOSS OF ASE (AUTO-MATIC STABILIZATION EQUIPMENT: H-2, WHEN	AT NIGHT/IFR, PILOT WILL ABORT MISSION & RETURN TO SHIP.	IF MISSION IS ABORTED SET FLT. QUARTERS, &
H-3 ONLY.)	DURING THE DAY, PILOT	READY TO RECOVER
ABORT	THE HELICOPTER	MAY OR MAY NOT
MISSION	TURN TO BRC &	DEPENDING ON
	MAKE SPEED TO	REQUIREMENTS.
	PROVIDE MOST	
	STEADY DECK	
		POSSIBLE.

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SECTION VII

ASW SYMBOLOGY

As part of the ASW Team the ASTAC should be thoroughly familiar with the symbology used on the DRT. The following is a list of the symbols to be used:

(1) OWN SHIP

(2) ASW AIRCRAFT
ASW HELICOPTER
LAMPS HELICOPTER

(3) SURFACE **FRIEND**
UNKNOWN
HOSTILE

(4) SUB-SURFACE **FRIEND**
UNKNOWN
HOSTILE

(5) ASSIST SHIP

(6) AIR FRIEND

(7) **SPECIFIC PLOTTING SYMBOLOGY**
(a) KNUCKLE
(b) WEAPON ENTRY POINT
(c) AOP
(d) TDZ
(e) TDA
(f) FOC
(g) LINE OF BEARING
(h) DATUM
(i) SONOBUOYS
(j) MAD CONTACT

Reference **NWP-60-3(series)** to review actual symbols and appropriate colors used when plotting on the DRT.

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SECTION VIII

REQUIRED READING

The following required reading list **must** be completed prior to the class convening date. This list was put together to better prepare you for ASTAC school.

SUBJECT	PUBLICATION CHAPTER/PAGE
COMMUNICATIONS	NWP 55-2-2 CHAP. 1
	ACP 125 CHAP. 3/PG 7
	ATP 28 CHAP. 7/PG 32-40 & 47
ASW	OS 1&C CHAP. 6
	ATP 28 CHAP. 5 & 6
PLOTTING SYMBOLS	NWP 60-3 APPENDIX B
IFF	NAVELEX 0967-390-8040 ALL
	NAVELEX 0967-465-5010 ALL
A/C CHARACTERISTICS	NWP 55-2-(A/C TACMAN)**
	NWP 55-2-2 CHAP. 4/PG 4-2
BREVITY CODE	ACP 165 PG 1-39

** THE TYPE OF A/C YOUR SHIP CARRIES

WORDS		NWP 55-2-2 CHAP. 1/PG 1-29
EMERGENCIES	NWP 42 ALL	
		JCS 3-50.
	ALL	
		JCS 3-50.1
	ALL	
		NWP 55-2-2
	CHAP. 10	
		NWP 55-8-SAR
	ALL	
		ATP 10-C
	ALL	

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SECTION IX

SUMMARY

As you can see, the duties and responsibilities of the ASW/ASUW Tactical Air Controller are varied and demanding. The ASTAC must be a highly skilled, knowledgeable professional, well-versed in the Operations Specialist rating and the areas of ASW and ASUW.

Further information on air control operations are available in the publications referenced on Page 3 and it is recommended that the prospective ASTAC spend time becoming familiar with them.

Be familiar with the following: OPTASK LINK, OPTASK ASW, OPTASK ASUW, OPTASK AAW, OPTASK EW. Review these Optasks as promulgated by your Battle Group Commander. It will greatly assist you in understanding the principles of ASW/ASUW.

Prepared by: Fleet Training Center, NORFOLK
Anti-Submarine/Anti-Surface Air Control Training Office

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